

---

**Tekst 7**

---

**Fountains of youth****Long For This World: The Strange Science of Immortality**

by Jonathan Weiner

Ecco 310pp \$27.99

**The Youth Pill: Scientists at the Brink of an Anti-Aging Revolution**

by David Stipp

Current 308pp \$26.95

**Susan Okie****Washington Post**

- 1 *Long for This World* and *The Youth Pill* are two striking new books on the same subject – science's current efforts to slow ageing and lengthen human life span. In *Long for This World*, Pulitzer prize-winning science writer Jonathan Weiner surveys the field as if from a mountain top: he's intrigued, yet detached and sceptical, frequently digressing from science to discuss how religions and cultures have dealt with the problem of mortality and to ponder whether the lust for ever-longer lives is a good thing. In *The Youth Pill*, science and business journalist David Stipp hunkers down in the trenches with researchers as they test compounds that offer the hope (so far based mainly on animal studies) of warding off many of the ills that afflict ageing bodies. Although no drug has yet been shown to extend the human life span, Stipp argues that such remedies are potentially just around the corner. 30, resveratrol (found in small amounts in red wine) is being marketed as a dietary supplement even though no studies have yet established whether taking large doses over long periods is safe and effective.
- 2 Weiner usually structures his books around individual scientists, and for this one he has chosen Aubrey de Grey, a brilliant but eccentric Cambridge computer scientist who has become an acknowledged leader in devising strategies to vanquish ageing. As a protagonist, De Grey is unappealing: he's good at seeing the big picture, but he's described as an arrogant man who takes pleasure only in working, swilling beer and punting on the river Cam. Weiner uses their encounters to lay out current theories about why we age. Ageing is not a biological constant: some organisms (hydras and sponges, for example) seem to be virtually immortal, and even some closely related groups of animals (such as bats and mice) have dramatically different life spans. Human ageing stems from progressive damage to our cells and their DNA – caused by threats from within, such as dangerous by-products of metabolic reactions, and from without, such as exposure to radiation or mutagenic chemicals. It's also thought to result from inherited mutations that have persisted in our genomes because they improve our reproductive success, but take a toll in later life.

- 3 Despite his overly cheerleading tone, Stipp does a better job than Weiner of explaining recent progress and conveying the mounting excitement of scientists in the field. His central character is David Sinclair, a brash Harvard researcher whose 2006 study of resveratrol's life-extending effects in mice ignited the interest of investors, drug companies and the general public. Stipp, a former reporter for *Fortune* and *the Wall Street Journal*, also interviewed other scientists in the forefront of the search for compounds that, like resveratrol, appear to activate genes involved in animals' response to environmental stress. Some of these genes were discovered in mutant worms or fruit flies that lived unusually long; others were found by researchers exploring why restricting food intake lengthens life span and conserves vigour in virtually every species that's been studied.
- 4 Weiner notes that the number of centenarians on the planet has more or less doubled with every decade since 1960. While Stipp suggests that anti-ageing drugs could deliver a free lunch, it seems more likely that there will be costs — for the individual, for society, for the planet.

2010

## Tekst 7 Fountains of youth

- 1p 29 What does paragraph 1 make clear about Jonathan Weiner and David Stipp?
- A They approach the studies on longevity from different angles.
  - B They discuss man's chances of a prolonged life from an ethical point of view.
  - C They have opposing ideas on how to achieve an extension of life expectancy.
  - D They support scientists who hope to improve human life expectancy.
- 1p 30 Which of the following fits the gap in paragraph 1?
- A Consequently
  - B Fortunately
  - C Instead
  - D Meanwhile

2p 31 Geef van elk van de onderstaande beweringen aan of deze wel of niet overeenkomt met de inhoud van alinea's 2 en 3.

- 1 Weiner has abandoned his standard objective angle for a more personal approach.
- 2 Human ageing is mainly caused by wear and tear of cells.
- 3 Journalists tend to get carried away by any promising prediction scientists make.
- 4 On the whole animal species are better at coping with stress than humans.

Noteer het nummer van elke bewering, gevolgd door "wel" of "niet".

"anti-ageing drugs could deliver a free lunch" (paragraph 4)

1p 32 What does Stipp's suggestion imply?

- A In addition to the positive impact on life span, dieting saves money.
- B There appear to be no drawbacks to pills extending human life expectancy.
- C There is a connection between increased life span and the cost to society.
- D The youth pill that is being developed reduces the need to have three meals a day.

"there will be costs – for the individual, for society, for the planet"  
(paragraph 4)

1p 33 Whose words are these?

- A David Stipp's
- B Jonathan Weiner's
- C Susan Okie's

1p 34 Blijkt uit de recensie van Susan Okie dat er medicatie is waarvan zeker is dat deze het verouderingsproces tegengaat?

Zo nee, antwoord "Nee". Zo ja, in welke alinea wordt deze medicatie genoemd?